

**ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM**

**Invertebrate Abstract**

**Element Code:** IMGASB5120

**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Oreohelix grahamensis*  
**COMMON NAME:** Pinaleno Mountainsnail  
**SYNONYMS:** *Oreohelix concentrata grahamensis*  
**FAMILY:** Oreohelcidae

**AUTHOR, PLACE OF PUBLICATION:** W.O. Gregg and W.B. Miller. 1974. Two new species of land snails from the Pinaleno Mountains, Arizona. Bulletin of Southern California Academy of Sciences 73(3): 146-151.

**TYPE LOCALITY:** South slope of the Pinaleno Mountains along the Swift Trail highway, on North side at a point 20.7 road miles from its beginning at US Highway 666, Graham County, Arizona. This is approximately half way between Ladybug Saddle and Heliograph Peak.

<b>TYPE SPECIMEN:</b> Holotype:	No. 1155	Natural History Museum of Los Angeles County.
Paratypes:	No. 12947	Geological Collection of the California Academy of Sciences.
	No. 109587	Field Museum of Natural History
	No. 2546	San Diego Natural History Museum

**TAXONOMIC UNIQUENESS:**

**DESCRIPTION:** Snail with mottled shell, "light brown above and lighter on the base with strong growth lines. It has two bands; the one above the periphery is about 1 mm wide and chestnut brown. The one below the periphery is somewhat wider. The shell is approximately 18 mm in diameter and is the only one in the Pinaleno Mountains that looks like this." (Hoffman, 1990).

**AIDS TO IDENTIFICATION:** Shell appearance - see description. "Wider umbilicus, more elevated spire, spiral striations, and more uniform coloration than other species in the *O. yavapai* group." (Hoffman, 1990).

**ILLUSTRATIONS:** Black and white photo of shell (Hoffman, 1990).

**TOTAL RANGE:** Pinaleno Mountains, Arizona. Rockslides from the Clark Peak area, the vicinity of Mt. Graham and south to the Heliograph Peak area.

**RANGE WITHIN ARIZONA:** See "Total Range."

## **SPECIES BIOLOGY AND POPULATION TRENDS**

**BIOLOGY:** Stylommatophorans often take water up through the pneumostome: a rectal pump rapidly conveys this water through the anus into the digestive tract. Under dry environmental conditions, this extrasomal reserve cannot only be utilized by absorption into the blood, but a large portion can be expelled from the anus and directly conveyed to the external body surfaces where water losses due to evaporation and locomotion occur. Furthermore, these animals frequently store urine in the pallial cavity, which is thought to function as a reservoir of water for subsequent resorption by the renal system. They are also able to rehydrate rapidly by the uptake of water through the integument, by drinking and through feeding.

Stylommatophora primarily possess two pairs of tentacles on the head, the cephalic tentacles with an eye at the apex of each, and inferior tentacles on the anterior face of the snout below the cephalic tentacles. They also lack an operculum.

**REPRODUCTION:** The genus *Oreohelix* is ovoviviparous, giving birth to only five or six offspring, normally once each summer. Stylommatophora are hermaphrodites. The gonad, typically embedded in the upper lobe of the digestive gland, produces both oocytes and spermatozoa.

**FOOD HABITS:** "*Oreohelix* in the Pinaleno Mountains subsist primarily on fungus and decaying plant matter. This diet is often supplemented with young green shoots when they are available." (Hoffman 1990).

**HABITAT:** *O. grahamensis* is normally not found within the talus and does not seem to seal to the rocks; but is found in the leaf litter within and around the talus.

**ELEVATION:** 6,590 - 10,080 ft (2,009-3,072 m) according to AGFD HDMS unpublished records, accessed 2003.

**PLANT COMMUNITY:** Hoffman states that "the species mix along Highway 666 (Swift Trail) above Ladybug Saddle, the type locality of ... *Oreohelix grahamensis* ... is found *Quercus gambelii*, *Pinus ponderosa*, and *Robinia neomexicana*" (1990).

**POPULATION TRENDS:** Unknown

## **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None (USDI, FWS 1996)

**STATE STATUS:**

[3C USDI, FWS 1991]

**OTHER STATUS:**

1B (AGFD SWAP 2012)

Forest Service Sensitive (USDA, FS Region  
3 1999, 2013)

**MANAGEMENT FACTORS:**     **Threats:** potential for extinction due to chance events acting on small localized populations; potentially intense fires due to increased fuel loads.

**Management needs:** research on effects of controlled burns; modification of fire suppression policy; periodic monitoring of known populations and their habitats.

**PROTECTIVE MEASURES TAKEN:****SUGGESTED PROJECTS:**

**LAND MANAGEMENT/OWNERSHIP:** USFS - Coronado National Forest, Safford Ranger District.

**SOURCES OF FURTHER INFORMATION****REFERENCES:**

Arizona Game and Fish Department. 2012. Arizona's State Wildlife Action Plan 2012-2022. Phoenix, AZ.

Barker, G.M. 2001. The Biology of Terrestrial Molluscs. CABI Publishing Wallingford, UK.

Bequaert, J.C. and W.B. Miller. 1973. The mollusks of the arid southwest, with an Arizona check list. The University of Arizona Press. Tucson, Arizona. P. 127.

Hoffman, J.E. 1990. Status survey of seven land snails in the Mineral Hills and the Pinaleno Mountains, Arizona.

NatureServe Explorer: An online encyclopedia of life [web application]. 2003. Version 1.6. Arlington, Virginia, USA: NatureServe. Available: <http://www.natureserve.org/explorer>. (Accessed: August 11, 2003).

USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.

USDA, Forest Service Region 3. 2013. Regional Forester's Sensitive Species List.

USDI, Fish and Wildlife Service. 1991. Endangered and Threatened Wildlife and Plants; Animal Candidate Review for Listing as Endangered or Threatened Species, Proposed Rule. Federal Register 56(225): 58821.

USDI, Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants: Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species. Federal Register 61(40): 7596-7613.

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**ADDITIONAL INFORMATION:**

Hoffman reports in his status survey that these snails were “considered to be *O. concentrata* until Miller looked at them more closely.”

**Revised:** 1992-04-22 (DBI)  
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2003-11-10 (AMS)  
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